Xitron Technologies 2503AH LabView Applications Manual

March 1995

INSTALLATION REQUIREMENTS

1. A 386 or better processor.
2. A math co-processor.
3. 12 MEG of hard disk free.
4. 8 MEG of RAM minimum.
5. A National Instruments board and driver installed, *configured and fully working under Windows

INSTALLATION INSTRUCTIONS

1. Create a Xitron subdirectory on your hard disk (*C:\Xitron* or *D:\Xitron*).

2. Copy the files from the disks to this subdirectory. They are:
   - _SUPPORT.EXE
   - _3CHL.EXE
   - _5552.EXE
   - _5553.EXE
   - _UPDATE.EXE

3. Run each of the files from step 2. This will un-archive the following files:
   - LVDEVICE.DLL
   - GPIBDRV
   - UPDATE.EXE
   - 3CHL.EXE
   - 555_2.EXE
   - 555_3.EXE

4. You may wish to delete the files from step 2. They are no longer needed, but consume approximately 4 Mbyte of disk space.

FILES INCLUDED:

LVDEVICE.DLL (_SUPPORT.EXE archive). This is the LabView Dynamic Link Library supplied by LabView and is required to run the executables.

GPIBDRV (_SUPPORT.EXE archive). This is the GPIB driver file supplied by LabView and is required to run the executables.

3CHL.EXE (_3CHL.EXE archive). This is a Windows executable file for the three channel application.

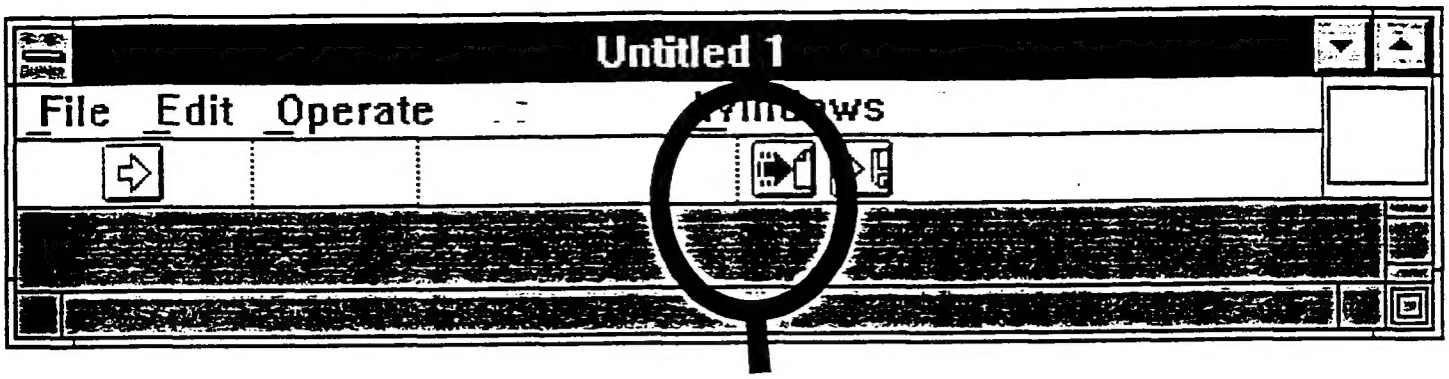
555_2.EXE (_5552.EXE archive). This is a Windows executable file for the IEC555.2 application.

555_3.EXE (_5553.EXE archive). This is a Windows executable file for the IEC555.3 application.

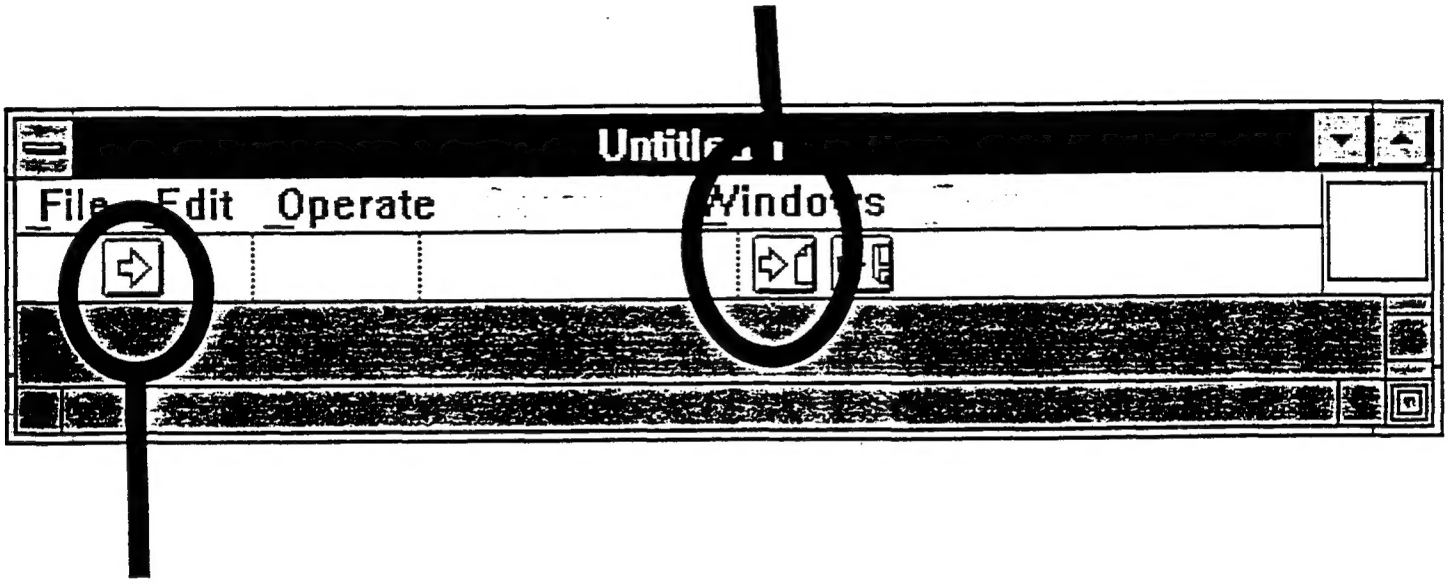
UPDATE.EXE (_UPDATE.EXE archive). This is a Windows executable file for the update program.

All examples were written with National Instruments LabView for Windows version 3.0.1 and tested with a National Instrument's AT-GPIB card on a 386 with a math co-processor, running Windows for Workgroups 3.11. Additional testing was performed on a 486DX2/66 laptop with a National Instruments PCMCIA card and a AMD 386-40 desktop with 8 MEG of ram.

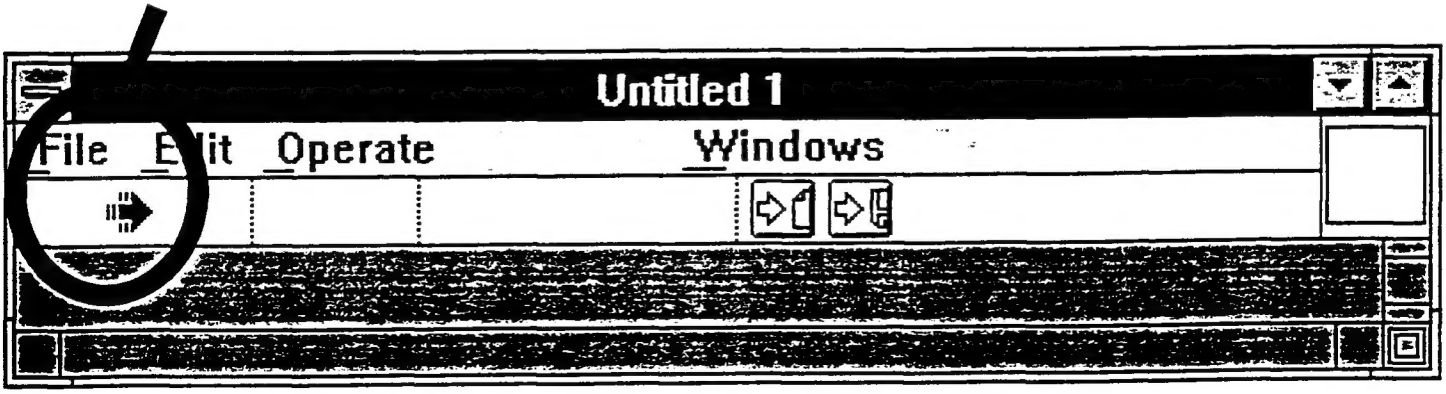
*The GPIB configuration used during development is provided later in this manual.



This is the Screen print button. If the arrow is BLACK, the screen will print when the program ends. To disable screen printing, change this to WHITE.

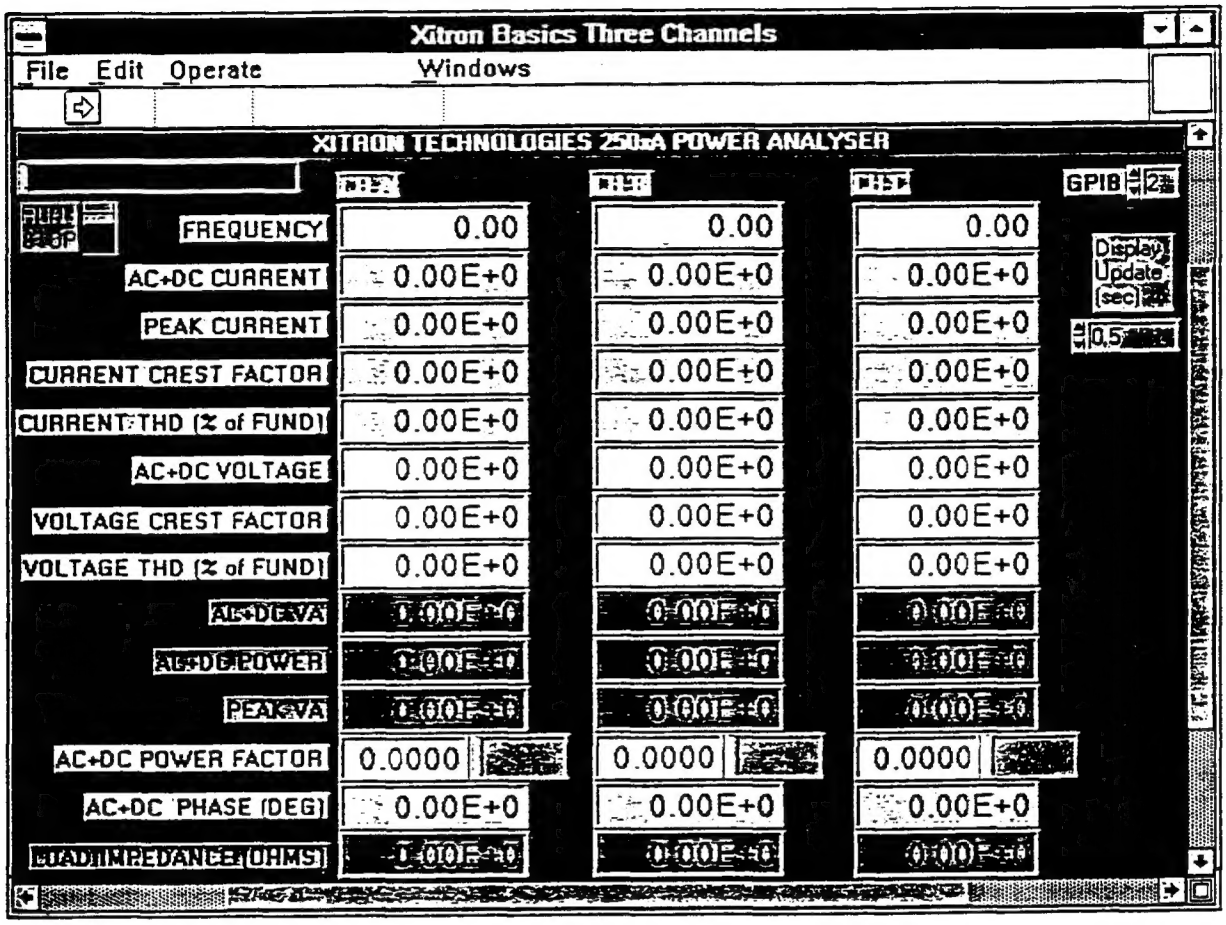


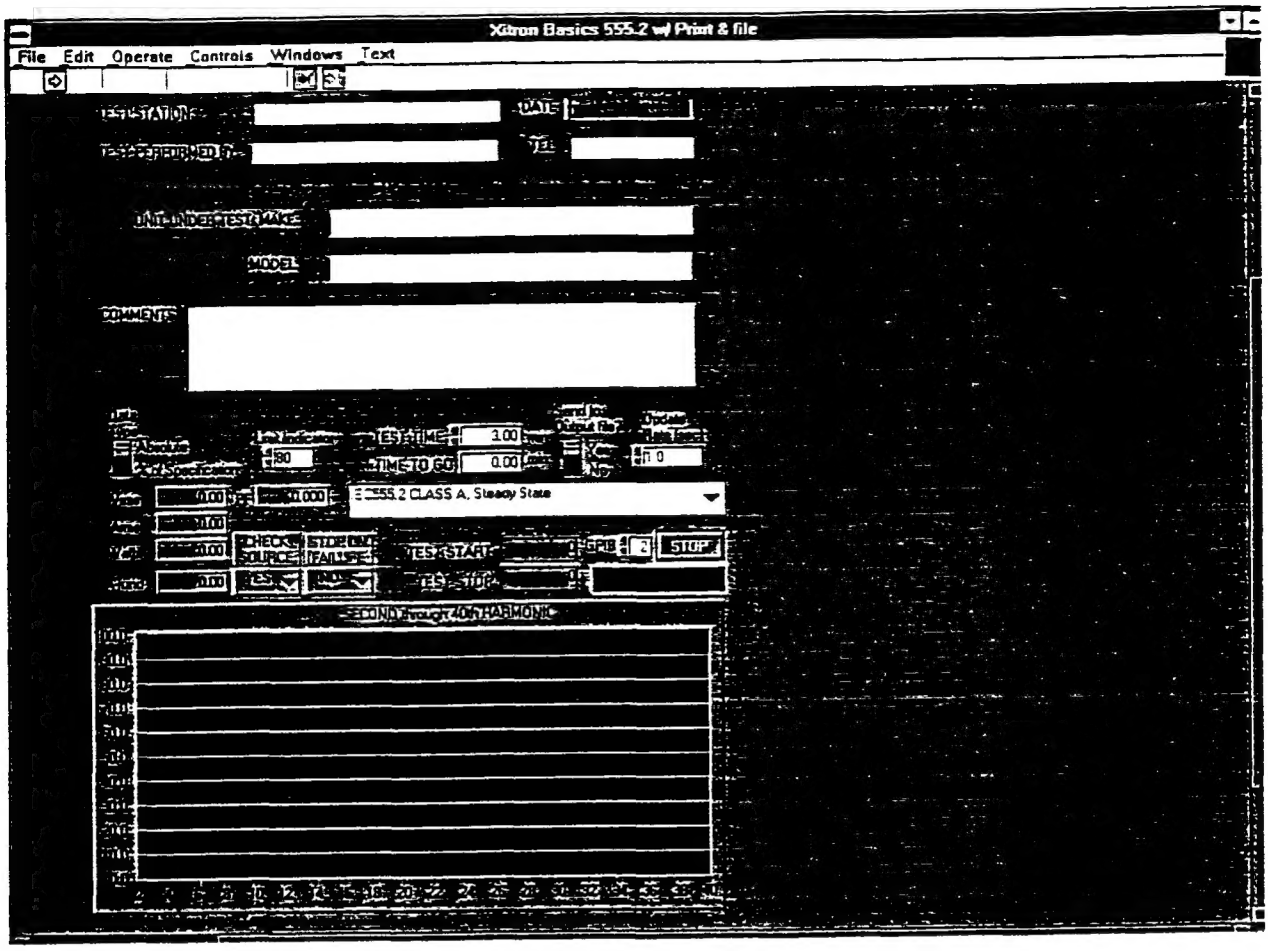
This is the RUN arrow and must be BLACK for the program to function. If it is white, the program has stopped.



3CHNL.EXE

This program begins with an instrument reset, then displays the parameters from the instrument's present settings. Unused channels will display zeros. No instrument setup is performed with this program, values are based upon existing channel configurations. You may change the display update rate to any value from 0.5 sec to several seconds between updates. To start the display updates, set the STOP/RUN switch to RUN.





This program configures channel A for IEC555.2 testing. There are several fields at the top of the window for the user to enter a test station, the test operator, the unit tested, comments etc. The computer's date is automatically entered in the Date field.

Data Type.	Allows switching between absolute values and the value as a percentage of specification for the selected class and type.
Limit Indicator.	This is a visual reference line on the output window. It has no other effect., other than indicating a "in-house" test limit.
Test Time, Time to GO.	Test time sets the time duration for the test, Time to Go is a countdown timer.
Send to Output file?	This enables or disables data logging. The data file, if selected is formated with tab delimiters for use in spreadsheet programs.
Update Rate (sec).	This is the delay value between data sets being written to a output file.

Vrms, Arms, Watts, A-fund, PF, Test Start, Test Stop. These are displayed parameters.

Check Source.	The Xitron is capable of testing the AC source to establish if it meets the IEC555.2 requirements. This switch enables or disables this function, i.e. allows a test to be run with a non-compliant power source.
Stop on Failure.	If a fail condition is measured, the test will stop. If printout is enabled, the display data (i.e. failure reason) will be printed.
GPIB.	Sets the IEEE address. Default is 2.
STOP	Ends the program. If printout is enabled, the current display will be printed.
Status window	Displays the status words from the Xitron.

IEC555.2 output file example.
The next page shows part of an output file. The file contains data for all 40 harmonics.

IEC555.2 Test File Example

DATE: 2/09/95

TEST START: 10:14:41
TEST STATION: New Power Supply Test
TESTED BY: Mathieu
UNIT UNDER TEST: Biomedical Conductance Meter
MODEL: 1250-56-90
XITRON TEST CONFIGURATION: IEC555.2 CLASS D, Steady State
Harmonic data below is given in Amps

Time	Status	Power	PF	Vrms	Fund A	Harm 2	Harm 3	Harm 4	Harm 5	Harm 6	Harm 7	Harm 8	Harm 9	Harm 10	Harm 11	Harm 12	Harm 13	Harm 14	Harm 15	Harm 16	Harm 17	Harm 18	Harm 19	Harm 20
10:15:17	FAIL	60.644	0.585	119.028	0.588	0.006	0.537	0.006	0.446	0.004	0.329	0.003	0.209	0.002	0.104	0.001	0.026	0.001	0.021	0.002	0.037	0.002	0.032	0.001
10:15:18	FAIL	60.623	0.584	119.068	0.588	0.005	0.537	0.004	0.446	0.004	0.329	0.003	0.209	0.002	0.104	0.001	0.026	0.001	0.021	0.001	0.037	0.001	0.033	0.001
10:15:19	FAIL	60.614	0.585	119.044	0.589	0.005	0.537	0.004	0.446	0.004	0.329	0.003	0.209	0.002	0.104	0.001	0.025	0.001	0.021	0.001	0.038	0.001	0.033	0.001
10:15:20	FAIL	60.706	0.585	119.071	0.588	0.006	0.537	0.006	0.446	0.004	0.329	0.003	0.209	0.002	0.103	0.002	0.025	0.001	0.022	0.001	0.038	0.001	0.033	0.001
10:15:21	FAIL	60.696	0.586	119.053	0.589	0.005	0.537	0.005	0.445	0.004	0.328	0.003	0.208	0.002	0.103	0.002	0.024	0.001	0.022	0.001	0.038	0.000	0.033	0.001
10:15:22	FAIL	60.691	0.585	119.154	0.588	0.006	0.537	0.006	0.445	0.004	0.328	0.004	0.208	0.003	0.102	0.002	0.024	0.001	0.022	0.001	0.038	0.000	0.033	0.001
10:15:23	FAIL	60.664	0.585	119.133	0.588	0.006	0.537	0.006	0.445	0.004	0.328	0.004	0.208	0.003	0.102	0.002	0.024	0.001	0.022	0.001	0.038	0.000	0.033	0.001
10:15:24	FAIL	60.670	0.585	119.041	0.588	0.006	0.537	0.005	0.445	0.005	0.328	0.004	0.208	0.003	0.102	0.002	0.024	0.001	0.022	0.001	0.038	0.000	0.033	0.001
10:15:25	FAIL	60.674	0.585	119.094	0.588	0.006	0.537	0.006	0.445	0.005	0.328	0.004	0.208	0.003	0.102	0.002	0.024	0.001	0.022	0.001	0.038	0.001	0.033	0.001
10:15:26	FAIL	60.661	0.585	119.151	0.588	0.006	0.537	0.006	0.445	0.005	0.328	0.004	0.208	0.003	0.103	0.002	0.024	0.001	0.022	0.001	0.038	0.000	0.033	0.000
10:15:27	FAIL	60.631	0.585	119.076	0.588	0.006	0.537	0.005	0.445	0.005	0.328	0.004	0.208	0.003	0.103	0.002	0.024	0.001	0.022	0.001	0.038	0.000	0.033	0.000
10:15:28	FAIL	60.669	0.585	119.108	0.588	0.006	0.537	0.005	0.445	0.005	0.329	0.004	0.209	0.003	0.103	0.002	0.024	0.001	0.022	0.001	0.038	0.000	0.033	0.000
10:15:29	FAIL	60.661	0.584	119.123	0.588	0.006	0.537	0.005	0.446	0.005	0.329	0.004	0.209	0.003	0.104	0.002	0.025	0.001	0.021	0.001	0.038	0.000	0.033	0.001
10:15:30	FAIL	60.648	0.585	119.141	0.588	0.006	0.537	0.005	0.445	0.005	0.329	0.004	0.209	0.003	0.104	0.002	0.025	0.001	0.021	0.001	0.038	0.000	0.033	0.001
10:15:31	FAIL	60.664	0.584	119.176	0.587	0.006	0.537	0.005	0.445	0.005	0.329	0.004	0.210	0.003	0.104	0.002	0.025	0.001	0.021	0.001	0.038	0.000	0.033	0.000
10:15:33	FAIL	60.676	0.585	119.145	0.588	0.006	0.536	0.005	0.445	0.005	0.329	0.004	0.209	0.003	0.104	0.002	0.025	0.001	0.021	0.001	0.038	0.000	0.033	0.000
10:15:34	FAIL	60.617	0.584	119.197	0.587	0.006	0.536	0.005	0.445	0.005	0.329	0.004	0.210	0.003	0.104	0.002	0.026	0.001	0.021	0.001	0.037	0.001	0.033	0.000
10:15:35	FAIL	60.655	0.586	119.182	0.588	0.006	0.536	0.006	0.444	0.005	0.328	0.004	0.208	0.003	0.102	0.002	0.024	0.002	0.022	0.001	0.038	0.001	0.033	0.001
10:15:36	FAIL	60.640	0.585	119.228	0.587	0.006	0.536	0.006	0.445	0.006	0.328	0.004	0.208	0.003	0.103	0.002	0.024	0.002	0.022	0.001	0.038	0.001	0.033	0.000
10:15:37	FAIL	60.628	0.584	119.072	0.588	0.006	0.536	0.006	0.445	0.006	0.329	0.004	0.209	0.003	0.103	0.002	0.025	0.001	0.022	0.001	0.038	0.001	0.033	0.000
10:15:38	FAIL	60.616	0.585	118.994	0.588	0.007	0.536	0.006	0.445	0.006	0.329	0.004	0.209	0.003	0.104	0.002	0.025	0.001	0.021	0.001	0.038	0.000	0.033	0.000
10:15:39	FAIL	60.634	0.585	119.008	0.588	0.007	0.537	0.006	0.445	0.005	0.329	0.004	0.209	0.003	0.104	0.002	0.025	0.001	0.021	0.001	0.038	0.000	0.033	0.001
10:15:40	FAIL	60.665	0.585	119.022	0.589	0.007	0.537	0.006	0.445	0.005	0.329	0.004	0.209	0.003	0.103	0.002	0.025	0.001	0.022	0.001	0.038	0.000	0.033	0.001
10:15:41	FAIL	60.637	0.584	119.156	0.587	0.006	0.537	0.005	0.445	0.005	0.329	0.004	0.209	0.003	0.104	0.002	0.025	0.001	0.022	0.001	0.038	0.000	0.033	0.000
10:15:42	FAIL	60.673	0.585	119.011	0.588	0.006	0.537	0.006	0.445	0.005	0.329	0.004	0.209	0.003	0.104	0.002	0.025	0.001	0.021	0.001	0.038	0.000	0.033	0.001
10:15:43	FAIL	60.677	0.585	119.117	0.588	0.006	0.537	0.005	0.445	0.005	0.329	0.004	0.209	0.003	0.104	0.002	0.025	0.001	0.022	0.001	0.038	0.001	0.033	0.001
10:15:44	FAIL	60.633	0.584	119.017	0.588	0.006	0.537	0.005	0.446	0.005	0.330	0.004	0.210	0.003	0.105	0.002	0.026	0.001	0.021	0.001	0.038	0.001	0.034	0.001
10:15:45	FAIL	60.620	0.585	119.056	0.587	0.006	0.537	0.006	0.446	0.005	0.330	0.004	0.210	0.003	0.104	0.002	0.025	0.001	0.021	0.001	0.038	0.001	0.034	0.001

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Note: File is truncated & print-out is reduced in size

IEC555.2 Test File Example

Harm 21	Harm 22	Harm 23	Harm 24	Harm 25	Harm 26	Harm 27	Harm 28	Harm 29	Harm 30	Harm 31	Harm 32	Harm 33	Harm 34	Harm 35	Harm 36	Harm 37	Harm 38	Harm 39	Harm 40
0.017	0.001	0.006	0.000	0.012	0.000	0.014	0.001	0.010	0.001	0.005	0.001	0.006	0.000	0.008	0.001	0.007	0.001	0.003	0.001
0.017	0.001	0.006	0.000	0.012	0.000	0.014	0.001	0.010	0.001	0.005	0.001	0.006	0.000	0.008	0.001	0.007	0.001	0.004	0.001
0.017	0.001	0.005	0.000	0.012	0.000	0.014	0.001	0.010	0.001	0.005	0.001	0.005	0.000	0.008	0.001	0.007	0.001	0.004	0.001
0.017	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.011	0.000	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.017	0.001	0.005	0.001	0.012	0.000	0.014	0.000	0.010	0.000	0.005	0.001	0.006	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.017	0.001	0.006	0.000	0.012	0.000	0.014	0.000	0.010	0.000	0.005	0.001	0.006	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.017	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.010	0.000	0.004	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.017	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.010	0.000	0.006	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.017	0.000	0.005	0.001	0.012	0.000	0.014	0.000	0.010	0.000	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.017	0.000	0.006	0.001	0.012	0.000	0.014	0.000	0.010	0.000	0.005	0.001	0.005	0.001	0.008	0.000	0.007	0.001	0.004	0.001
0.017	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.010	0.000	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.011	0.000	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.011	0.000	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.010	0.001	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.011	0.001	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.011	0.000	0.005	0.001	0.006	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.005	0.001	0.012	0.000	0.014	0.000	0.011	0.000	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.007	0.001	0.013	0.001	0.015	0.001	0.011	0.001	0.005	0.001	0.005	0.001	0.007	0.001	0.006	0.001	0.003	0.001
0.018	0.001	0.006	0.001	0.012	0.001	0.015	0.001	0.011	0.001	0.005	0.001	0.005	0.001	0.007	0.001	0.007	0.001	0.003	0.001
0.018	0.001	0.006	0.001	0.012	0.001	0.014	0.001	0.011	0.001	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.018	0.000	0.006	0.001	0.012	0.000	0.014	0.001	0.011	0.001	0.005	0.001	0.006	0.001	0.008	0.000	0.007	0.001	0.004	0.001
0.018	0.001	0.006	0.001	0.012	0.000	0.014	0.001	0.011	0.001	0.005	0.001	0.005	0.001	0.008	0.000	0.007	0.001	0.004	0.001
0.018	0.000	0.006	0.001	0.012	0.000	0.014	0.000	0.010	0.000	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.011	0.000	0.005	0.001	0.005	0.001	0.008	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.011	0.000	0.005	0.001	0.005	0.001	0.007	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.006	0.001	0.012	0.000	0.014	0.000	0.011	0.000	0.005	0.001	0.005	0.001	0.007	0.001	0.007	0.001	0.004	0.001
0.018	0.001	0.006	0.001	0.012	0.000	0.014	0.001	0.011	0.001	0.005	0.001	0.006	0.001	0.008	0.001	0.007	0.001	0.004	0.001

Note: File is truncated & print-out is reduced in size

This program allows Flicker testing in accordance with IEC555.3 and IEC868 specifications. The program reads data from the 250xAHF analyzers, and displays this data, as well as writing it to a user defined test file. The IEC555.3 program requires the Flicker option to be present in the analyzer. If the Flicker option is not installed, the program will abort.

The IEC555.3 test program will automatically configure the selected analyzer's channel for Flicker measurements. Note that the analyzer configuration is not stored in the instrument's memory. So, you may return to your original setup by simply turning the analyzer off, and back on again.

The IEC555 program provides a number of functions, and allows you to select a few options. The top portion of the display shows various fields, which can be used to enter a test station name, the person performing the test, as well as unit under test data. Note that the content of these fields are automatically entered as a file header in the test file, which will be created by the program. The "comments" field is not entered in the test file, but is printed at the end of the test, if print-out is enabled.

The user must select the file update rate, whether or not Pst & Plt are used in the test, and the test duration. The program will read data from the analyzer, and store it in the test file at the rate which is entered in the file update rate box. Some devices require only dt and dc to be tested, while Plt and Pst are ignored. The analyzer needs to be set up to ignore Pst and Plt in the PASS/FAIL decision process, if so desired. Note that Pst and Plt testing is only available if the test duration is long enough (at least 120 min. for Plt).

After the user starts the test by clicking the mouse on the start arrow, the program will request a test file name to be entered. After the file name is entered, the Flicker test procedure will commence. Flicker level is determined by measuring voltage fluctuations, and evaluating these fluctuations in accordance with the methods described in IEC555.3 (CO-38) and IEC868 (and Amendment I to IEC868).

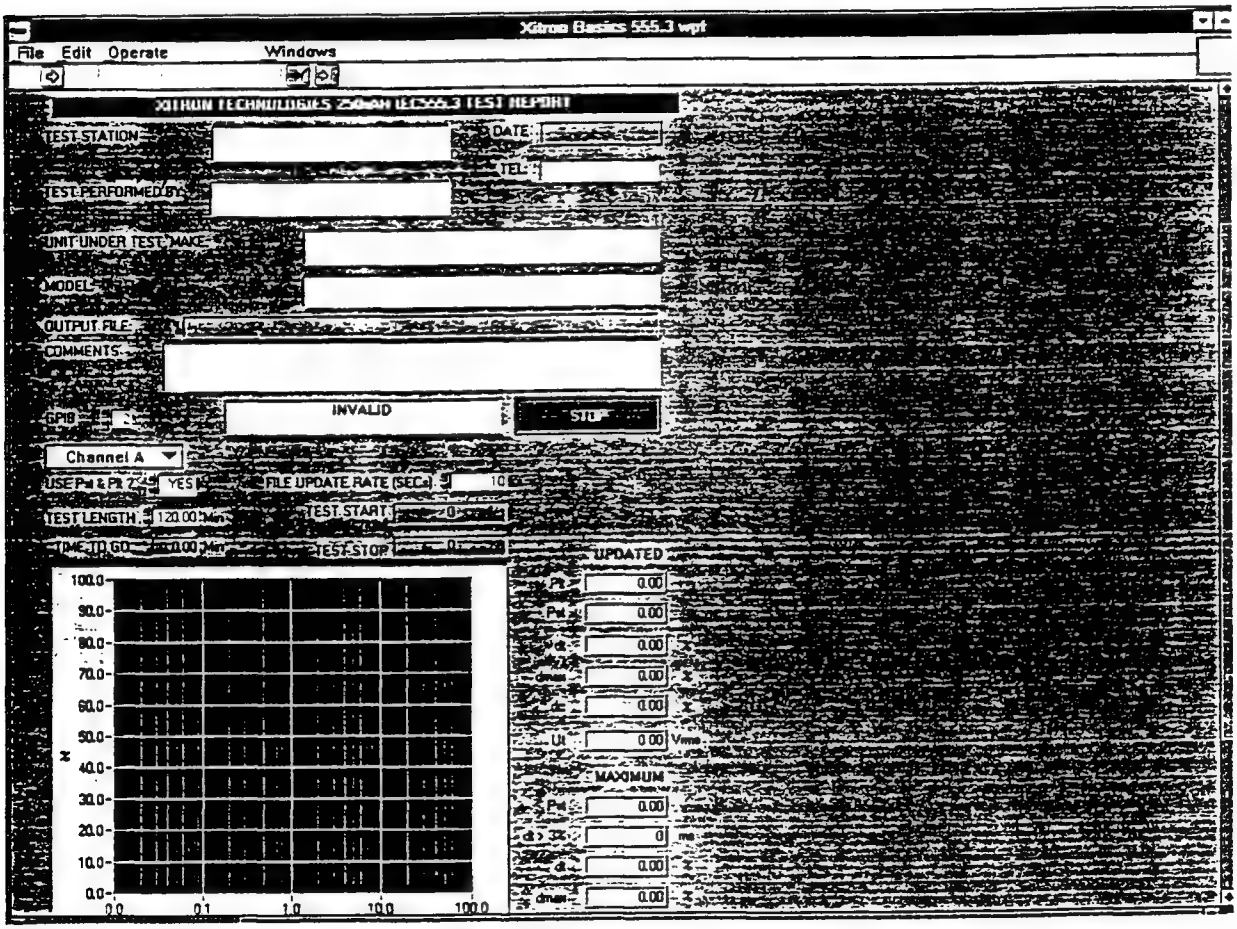
Prior to measuring voltage fluctuations, a steady state condition has to be established. Therefore, the analyzer will take a number of readings to establish steady state, and this process may take from 1 -3 minutes. While the steady state condition is being established, the status window will display the "STARTING" message. After the analyzer starts gathering actual voltage fluctuation data, the message will change to RUNNING, and ultimately it will display the PASS or FAIL message. If the test fails, the reason for failure will be shown as well. In case there are several parameters that caused the failure, only the one with the highest failure percentage will be shown.

Note that the IEC555.3 test program is mainly a graphical display, and test file creation tool. All measurements and analysis, including the pass/fail decision are made by the analyzer. So, this program is not required to run a test, it does however provide a visual

display of all important parameters. The updated parameters provide the current data, while the maximum fields display the highest values that have occurred during the test.

Also note that if the user modifies test time, change the selected channel, change Plt & Pst selections, or modify the file update rate, the test will be restarted. The user may keep the generated test data, and enter a new test file name when the test is restarted. A test file example is shown on the next page. Note that IEC555.3 test files can become very large if the update rate is kept to short times like 1 - 5 seconds. Even a 10 second interval will create a spreadsheet, with 20 columns and 720 rows.

The test file creates columns with a time stamp, the test status, and some 18 parameters. Consult the IEC555.3 and IEC868 standards for a definition of the various test parameters. The graph which is displayed on the screen, uses the 99 % – 0.2 % (percentile) data to create the instantaneous graph for "P". The parameters in the columns from Plt - Ut are used for the UPDATED parameter fields, while the columns showing Pstm - dcm are representative of the MAXIMUM values.



Output File:	This is a display window, showing the current test file name and path.
GPIB.	Sets the IEEE address. Default is 2.
Status window.	Displays the status words from the Xitron.
STOP.	Ends the program. If printout is enabled, the current display will be printed.
Channel A.	This control selects which channel is to be used for the Flicker test.
Use Pst & Plt?	You may choose to exclude Pst and Plt values in the PASS/FAIL decision (required for certain type IEC555.3 tests).
Test Length.	Sets the time length of the test.
~Time to Go.	Approximate time until completion of the current test.
File Update Rate.	Sets the delay between data sets stored in the output file.
Test Start, Test Stop.	Displays time of day when the test started/stopped.
Updated.	These are the parameters for the currently sampled data set.
Maximum.	These are the maximum values of the parameters which occured during the currently running test.

IEC555-3 Output File Example.
The next page shows a test file example.

IEC555.3 Test File Example

XITRON TECHNOLOGIES IEC555.3 TEST FILE.
DATE: 3/03/95
TEST START: 12:35:12
TEST STATION: Xitron technologies inc.
TESTED BY: Mathieu van den Bergh
UNIT UNDER TEST: C-314 power supply
MODEL: C-314
ROM Version: 02.99
Output file: c:\test1.txt

Time	Status	Pst	Pst	dt	dmax	do	Ut	Pstm	dlm	dmaxm	dcm	50%P	60%P	53%P	01.5%P	99%P	80%P	70%P	60%P	50%P	40%P	30%P	20%P	10%P	5%P	6%P	4%P	3%P	1%P	0.5%P	0.3%P
12:34:37	RUNNING	0.00	0.00	0.01	0.00	0.00	118.44	0.00	0.31	0.00	0.00	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.05	0.06	0.06	0.07	0.07	0.07	0.10	0.11	0.11	1.00	1.00
12:34:46	RUNNING	0.00	0.22	0.16	0.00	0.00	118.26	0.00	0.31	0.00	0.00	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.06	0.06	0.06	0.06	0.07	0.08	0.08	0.10	0.10	0.11	0.12	0.13	0.14
12:34:57	RUNNING	0.00	0.23	0.06	0.00	0.00	118.26	0.00	0.32	0.00	0.00	0.03	0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08	0.10	0.10	0.11	0.12	0.13	0.13	0.13	0.14
12:37:06	RUNNING	0.00	2.07	0.15	1.70	1.51	118.33	0.00	5.41	5.40	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.38	1.13	3.00	10.63	29.38	47.88	54.38
12:37:16	RUNNING	0.00	1.91	0.15	1.70	1.51	118.29	0.00	5.41	5.40	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.38	1.63	6.00	21.75	41.88	51.25
12:37:27	RUNNING	0.00	1.76	0.07	1.70	1.51	118.00	0.00	5.41	5.40	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.38	0.88	4.50	16.00	36.50	50.00
12:37:36	RUNNING	0.00	2.02	1.10	5.10	0.94	118.55	0.00	5.46	5.40	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.50	1.38	3.63	10.50	28.00	45.50	56.63
12:37:47	RUNNING	0.00	1.82	0.66	1.61	1.51	118.45	0.00	5.46	5.40	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.50	1.25	3.13	8.38	24.25	42.00	57.13
12:37:56	RUNNING	0.00	1.85	0.35	1.61	1.51	118.32	0.00	5.46	5.40	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.25	0.88	2.50	7.00	20.50	38.63	56.38
12:38:06	RUNNING	0.00	1.78	0.25	1.61	1.51	118.24	0.00	5.46	5.40	1.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.63	1.88	5.88	17.63	36.50	55.00

Note: File is truncated & print-out is reduced in size

XITRON 2503AH MAIN SOFTWARE UPDATE, USING IEEE
March 10, 1995

250XAH instruments with version 2.95 or greater software have the ability to field upgrade the main software code via the IEEE port. If your computer can send a file to IEEE address 29, you can upgrade your instrument. This document will document the steps necessary.

1. Press the Calibrate/Test key, then select the System Status line (the top one). As the message screens scroll, screen #2 will display the main software version on the top line. If it is 2.95 or greater, continue. If it is earlier, your hardware does not support this feature.

2. Press the System key and scroll down to the System S/W Upgrade line. Select this line. Select the Password line and key in the Xitron supplied password. Press the Enter key. The instrument should be in the Main Software Download screen. This mode defaults to IEEE address #29 and cannot be changed. Note: the instrument defaults to a listen only device. You may, therefore, update several devices at the same time.

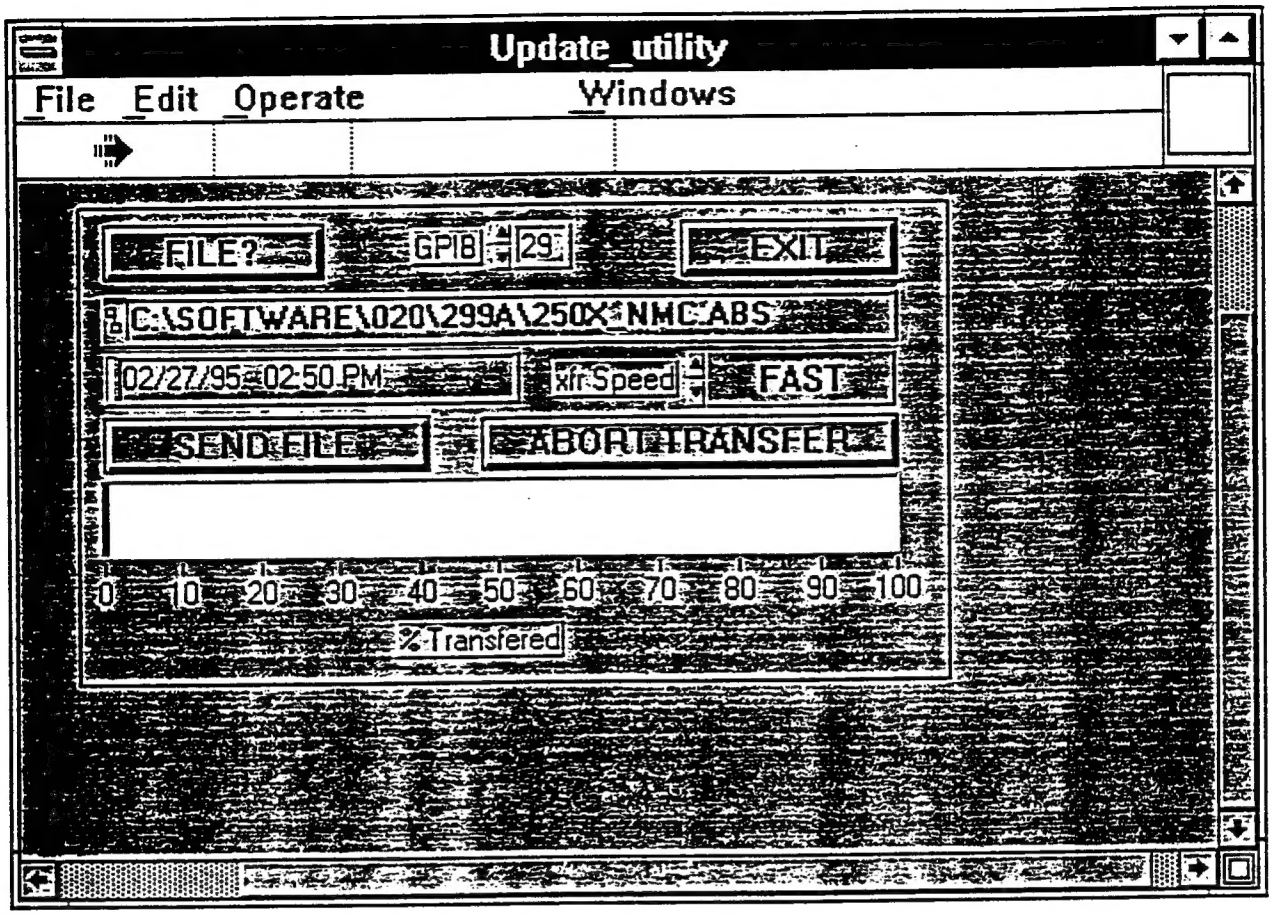
3. Copy the file from the floppy, or download it from Xitron and place it on your hard disk. Uploading from the floppy will severely increase the upgrade time. Xitron can provide a LabView program that is compatible with the National Instruments interface. Alternatively, you can use the National Instruments IBIC program and use the IBWRTF command. For other manufacturers, please consult your IEEE board's documentation.

4. When the instrument receives the beginning of the file, it will erase the existing ROM code in the instrument. The software is ~18000 blocks. After successful completion, the instrument will display TURN POWER OFF NOW. Turn off the power, turn it back on and watch the screens. Once the instrument is running, do the following:

    1. Press the Quick key and select Standard Channel Use, Enter, Enter.
    2. Store this in one of the memory locations. If you have an existing setup in the location you choose, it will be overwritten. The factory uses location zero.
    3. Press the System key, scroll down until you see NV data control. Select this and then select Pack Data in Memory.

WAIT UNTIL THE SCREEN RETURNS TO NORMAL, THEN WAIT AN ADDITIONAL 5 SECONDS TO BE SURE ALL DATA IS RE-WRITTEN.

Now turn off the instrument and turn it back on.



File? This button brings up the file selection screen.

Exit Ends the program.

C:\software\020\299A\250X_NMC.ABS
This is the currently selected file to be transmitted to the Xitron.

Date & Time This is the above file's creation date and time.

Xfr Speed This allows selection of transfer speed. Fast transfers 4096 bytes at a time, Medium is 512 and slow is 128. If you encounter problems with a transfer "hanging", decrease the speed and try again.

Send File This button begins the transfer. The Xitron must be in the Main Software D/L screen before this button is pressed.

Abort Transfer This stops a transfer in mid transmission. Your instrument will be inoperative if you abort a transfer, until you successfully complete a download.

Update. EXE Instructions.

1. Place the instrument in the Main Software Download mode as described above.

2. Ensure your GPIB driver is configured to talk to address 29. (IBCONF)

3. Press the File button and select the proper file.

4. Press the Send File button.

5. When the instrument receives the beginning of the file, it will erase the existing ROM code in the instrument. The software is ~18000 blocks. After successful completion, the instrument will display TURN POWER OFF NOW. Turn off the power, turn it back on and watch the screens. Once the instrument is running, do the following:

    1. Press the Quick key and select Standard Channel Use, Enter, Enter.
    2. Store this in a location. The factory uses location zero, if you have a setup in this location it will be overwritten.
    3. Press the System key, scroll down until you see NV data control. Select this and then select Pack Data in Memory.

WAIT UNTIL THE SCREEN RETURNS TO NORMAL, THEN WAIT AN ADDITIONAL 5 SECONDS TO BE SURE ALL DATA IS RE-WRITTEN.

Now turn off the instrument and turn it back on.

GPIB interface configuration.

National Instruments	GPIB0 Configuration	AT-GPIB/TNT Ver 2.5
Primary GPIB Address	0	
Secondary GPIB Address	NONE	
Timeout	30sec	
Terminate Read on EOS	No	
Set EOI with EOS on Writes	No	
Type of compare on EOS	7-bit	
EOS byte	00h	
Send EOI at end of Write	Yes	
System Controller	Yes	
Assert REN when SC	No	
Enable Auto Serial Polling	Yes	
Enable CIC Protocol	No	
Bus Timing	500ns	
Cable Length for High Speed	Off	
Parallel Poll Duration	Default	
Use this GPIB interface	Yes	
Base I/O Address	02C0h	
Interrupt Level	11	
DMA Channel	NONE	
DMA Transfer Mode	Demand	

National Instruments	DEV2 Configuration	AT-GPIB/TNT Ver 2.5
Primary GPIB Address	2	
Secondary GPIB Address	NONE	
Timeout setting	10sec	
Serial Poll Timeout	1sec	
Terminate Read on EOS	No	
Set EOI with EOS on Writes	No	
Type of compare on EOS	7-bit	
EOS byte	00h	
Send EOI at end of Write	Yes	
Enable Repeat Addressing	Yes	

National Instruments	DEV29 Configuration	AT-GPIB/TNT Ver 2.5
Primary GPIB Address	29	
Secondary GPIB Address	NONE	
Timeout setting	10sec	
Serial Poll Timeout	1sec	
Terminate Read on EOS	No	
Set EOI with EOS on Writes	No	
Type of compare on EOS	7-bit	
EOS byte	00h	
Send EOI at end of Write	Yes	
Enable Repeat Addressing	No	